

Historic, Archive Document

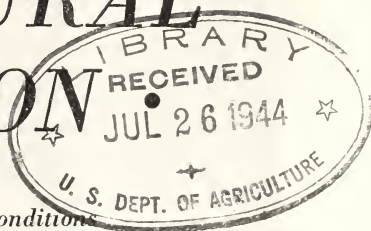
Do not assume content reflects current scientific knowledge, policies, or practices.

ecyAg
5
cop.

THE AGRICULTURAL SITUATION

JULY 1941

A Brief Summary of Economic Conditions



Issued Monthly by the Bureau of Agricultural Economics, United States Department of Agriculture

Subscription price, 50 cents per year; single copy, 5 cents; foreign price, 70 cents; payable in cash or money order to the Superintendent of Documents, Government Printing Office, Washington, D. C.

VOLUME 25 - NUMBER 7 - WASHINGTON, D. C.



IN THIS ISSUE

Commodity Reviews:	Page
Demand.....	F. L. Thomsen 2
Lease-Lend, Prices, Income.....	Frank George 2-8
Production, Prices, and National Defense.....	Mordecai Ezekiel, and V. D. Reeve 9
"Here Are Today's Livestock Markets—".....	Harry Henderson 12
Income of Typical Wheat Farms.....	W. D. Blachly and W. D. Goodsell 15
Food Consumption.....	18
New Products for Old.....	W. W. Skinner 19
What is a Cow Worth?.....	E. E. Vial 21

INCREASED INDUSTRIAL PRODUCTION and the largest national income in our history are providing good domestic markets for farm products. Prices of farm products have advanced, but many products continue to stand lower in purchasing power than in the 1910-14 period of parity. Farm income in the first half of 1941 was the largest in more than a decade, but total for the full year will be about 9 percent of the national income. Farm income in 1929 was 10 percent of the national income. The comparable figure for 1910-14, allowing for the greater increase in city than in farm population, is about 12 percent. * * * The 1941 season began with production prospects unusually bright, then drought intervened to cause anxiety for crop prospects in the east, subsequent rains repaired much of the damage. Unless bad weather should prevent, the out-turn of crops and livestock products may be the largest on record. There should be plenty of food for us and for Britain. * * * Markets are being aided by the unusually good domestic demand and by Government purchases of foods for relief distribution and for export. Nevertheless, it is likely that prices will advance less in the last half of the year than the advance in the first half.

Commodity Reviews

DEMAND: Higher

THE sharp rise in prices of farm products since March is evidence of the marked improvement in demand which has occurred in recent months. This has been due to several factors: (1) Increasing employment and consumer purchasing power accompanying the faster tempo of industrial activity as the defense program expands; (2) Government purchases of foodstuffs under the food-for-defense program; (3) price adjustments to the higher Government loan rates which will apply to 1941 crops; (4) higher prices for some imported commodities, especially fats and oils, which compete with domestic products; (5) generally strong storage and speculative demand for products such as butter and eggs based on the prospects for continued improvement in consumer demand, continued Government buying and support for prices of commodities affected by the food-for-defense program, and generally rising commodity prices.

The effects of some of these favorable factors in the demand situation of the immediate past will be somewhat different in the future. To the extent that storage demand results in a decrease in immediate consumption and larger supplies next winter, for example, a part of the effects of future improvement in consumer purchasing power is being transferred to the present. Likewise, the effects of higher Government loan rates to apply in the next marketing season already have been discounted to a considerable extent in the markets for the affected commodities. Moreover, it becomes progressively more difficult to obtain additional increases in industrial production as the new plants under construction during the past year finally come into operation and previously idle facilities are utilized more nearly to capacity. From now on, increases

in the output of defense equipment will to an increasing extent be at the expense of the production of goods for consumers, and thus not represent an equivalent net increase in total industrial activity. For these reasons, the anticipated further improvement in demand conditions during the remainder of the year may not be as rapid or marked as in recent months.

F. L. THOMSEN.

LEASE-LEND: Allocations

President Roosevelt reported to Congress last month that 55 million dollars of Lease-Lend funds had been allocated up to May 31 for agricultural products. All but 3 million dollars of this sum was for foodstuffs. Allocations for dairy products and eggs totaled 31.7 million dollars; meat, fish, and fowl, 6.1 million; fruits, vegetables, and nuts, 6.0 million; grain and cereal products, 3.1 million; lard, fats, and oils, 3.6 million; and other foodstuffs, 1.5 million dollars.

Export prospects for these commodities have improved to the extent of the Lease-Lend allotments, but no marked increases in exports are in sight for cotton, wheat, fresh fruits, and most other commodities ordinarily exported in large volume. Some increase is expected in exports of tobacco, although the ocean transport situation makes doubtful a return to the pre-war export volume. Total of exports of all agricultural commodities combined is far below pre-war volume.

PRICES: Up

Purchasing power of farm products continues below pre-war parity, despite the sharp rise in prices received by farmers in recent months. Reason is that the prices paid out by farmers for the things they buy average 26 percent above pre-war, whereas prices received by farmers average only 18

percent higher than during the 1910-14 base period.

Including wages paid to hired labor, the purchasing power of farm products is even less than the 94 percent shown in the accompanying table, since the index of farm wages is 38 percent higher than the 1910-14 level. This

Index Numbers of Prices Received and Paid by Farmers

[1910-14=100]

Year and month	Prices received	Prices paid	Buying power of farm products ¹
1940			
June.....	95	123	77
July.....	95	122	78
August.....	96	122	79
September.....	97	122	80
October.....	99	122	81
November.....	99	122	81
December.....	101	123	82
1941			
January.....	104	123	85
February.....	103	123	84
March.....	103	124	83
April.....	110	124	89
May.....	112	125	90
June.....	118	126	94

¹ Ratio of prices received to prices paid.

Prices of Farm Products

Estimates of average prices received by farmers at local farm markets based on reports to the Agricultural Marketing Service. Average of reports covering the United States weighted according to relative importance of district and States.

Product	5-year average, August 1909-July 1914	June average, 1910-14	June 1940	May 1941	June 1941	Parity price June 1941
Cotton, lb.....cents..	12.4	12.7	9.54	11.68	12.81	16.12
Corn, bu.....do.....	64.2	68.4	63.5	65.9	68.3	83.5
Wheat, bu.....do.....	88.4	89.0	67.4	79.4	83.1	114.9
Hay, ton.....dollars..	11.87	12.16	7.71	7.98	7.82	15.43
Potatoes, bu. ¹cents..	69.7	71.8	85.7	53.4	64.6	89.9
Oats, bu.....do.....	39.9	41.8	32.7	34.0	33.3	51.9
Rice, bu.....do.....	81.3	(²)	72.6	115.4	113.5	105.7
Peanuts, lb.....do.....	4.8	5.2	3.52	3.65	4.01	6.2
Tobacco: ¹						
Maryland, type 32.....do.....	23.0	(²)	21.4	29.0	30.0	18.2
Cigar filler, types 41-45.....do.....	14.1	(²)	9.9	6.7	6.3	11.1
Cigar binder, types 51-55.....do.....	19.9	(²)	12.1	13.6	12.5	15.7
Apples, bu.....dollars..	.96	1.18	*1.12	1.01	1.14	1.25
Beef cattle, cwt.....do.....	5.21	5.44	7.10	8.52	8.63	6.77
Hogs, cwt.....do.....	7.22	7.16	4.82	8.19	8.98	9.39
Chickens, lb.....cents..	11.4	11.9	13.3	16.3	16.3	14.8
Eggs, doz.....do.....	21.5	16.7	14.4	20.1	23.2	³ 22.1
Butterfat, lb.....do.....	26.3	23.4	25.6	34.7	35.7	³ 31.8
Wool, lb.....do.....	18.3	17.5	28.6	36.1	36.5	23.8
Veal calves, cwt.....dollars..	6.75	6.77	8.46	9.90	9.90	8.78
Lambs, cwt.....do.....	5.87	6.30	8.12	9.05	9.14	7.63
Horses, each.....do.....	136.60	138.90	75.00	70.30	69.90	177.60

¹ Post-war base.

² Prices not available.

³ Adjusted for seasonality.

⁴ Revised.

was the highest purchasing power figure (excluding wages) since the year 1929.

Best gains in prices received by farmers in recent months have been in cotton, wheat, hogs, poultry, eggs, truck crops, and fruits. Improving economic conditions will continue to give an upward lift to prices of farm products in general, although the gains during the last half of the year will likely be less than during the first half.

INCOME: Rise

Farmers this year will receive the largest cash income since 1929. Total from marketings and Government payments has been estimated at 10.7 billion dollars. This compares with 9.1 billion in 1940, with 8.6 billion in 1939, and 11.2 billion in 1929. The larger income this year than last is attributable to higher prices and to prospects for a larger volume of marketings. Of the total, Government payments will be about the same as in 1940—about 700 million dollars.

Besides the improved demand flowing from the largest industrial income in our Nation's history, the Federal Government is buying large quantities of food for relief distribution and for export to Britain. In addition, 1941 farm income prospects have been raised by more than 500 million dollars by legislation increasing loans on basic farm commodities to 85 percent of parity. Total farm income this year will be about 9 percent of the national income, as compared with about 10 percent of the national income in 1929, and with 12 percent in 1910-14.

Farm cash income from marketings and Government payments totaled 307 million dollars more in the first 5 months of this year than in the like period of 1940. Income from grains and tobacco was smaller than in 1940; income from cotton, fruits, vegetables, and all livestock and livestock products, was larger. Government payments were smaller.

The following table gives comparable totals for recent years

Month and year	Income from marketings	Income from Government payments	Total
	<i>Million dollars</i>	<i>Million dollars</i>	<i>Million dollars</i>
May:			
1941.....	748	25	773
1940.....	592	28	620
1939.....	528	80	608
1938.....	521	44	565
January-May:			
1941.....	3,240	304	3,544
1940.....	2,852	385	3,237
1939.....	2,587	362	2,949
1938.....	2,639	212	2,851

FARM LABOR: Decrease

June reports showed there were fewer workers on farms this spring than last, but that farm production and marketing schedules were well maintained. June 1 production of milk was the largest on record for that date, production of eggs per 100 hens was at a new high, and marketings of fruits

and vegetables were a little larger than at the same time last year.

The reduction in the farm labor force this June 1 compared with last was in the number of farm family workers. Total of family workers this June 1 was 8,873,000 as compared with 9,131,000 on the same date last year. Total of hired workers this June 1 was 2,775,000 as compared with 2,765,000 a year earlier.

These figures suggested that hired workers lost to the selective draft and industrial defense industries had been replaced in part from the ranks of unpaid family workers.

COTTON: Up

Cotton has been selling at highest prices in years. The reason for this is to be found in the higher Government loan rates, a continuing strong demand for cotton by domestic mills, unfavorable growing conditions over much of the Cotton Belt, and the continued advance in the general level of commodity prices. Domestic mill consumption during the first 10 months of 1940-41 set a new high record of 7.9 million bales, as contrasted with 6.6 million bales in the like period of 1939-40.

Government loan stocks of cotton were reduced sharply in recent months, heavy withdrawals having been made by producers as prices advanced. As of June 21 the Government owned 6.1 million bales from the 1934 and 1937 crops, and held about 1.5 million bales as collateral on loans to growers. Total Government holdings were about 7.6 million bales as contrasted with nearly 11.1 million bales earlier in the season.

Exports totaled less than 1 million bales during the first 10 months of 1940-41, as compared with nearly 6 million bales during the like period in 1939-40. Prospects for exports during the coming year are even slimmer because of the limited ocean shipping space and the price disparity between American and foreign growths of cotton.

WHEAT: Big Supply

Much of the new winter wheat crop has been marketed by now or put under Government loan. Farmers have been getting higher prices this summer than last, even though prices currently are below loan values. In recent years of Government loans, prices usually have been below loan values until a substantial part of the new crop was put under loan. When prices advanced in response to the raising of Government loan rates, large quantities of 1940 wheat were redeemed by growers.

A tight storage and transportation situation has developed this season on account of the heavier utilization of storage capacity and the needs of transport facilities for national defense. To assure the best use of available storage capacity and transport facilities the Department of Agriculture has assisted in the organization of local committees in each of the principal market areas to handle the wheat crop, and is issuing special mid-month reports on probable production in leading producing States. Mid-month reports in July and August will relate to spring wheat production in the Dakotas, Montana, and Minnesota.

United States supply of wheat (production of winter and spring wheat plus carry-over) will be about 1,300 million bushels this season. This is about twice the domestic disappearance of wheat in this country in recent years. Last year, the total supply was 1,100 bushels. Supplies in Canada and Argentina also are unusually large. World stocks on July 1 were the largest on record for that date, the increases in the United States, Canada, and Argentina this season compared with last more than offsetting reductions in Australia, Europe, and North Africa.

FEED: Plentiful

Feed supply may be larger this year than last. Much depends upon

weather conditions this month and next, but prospects for the 1941 corn crop are good, and total corn supply may be larger this fall than last. The 1941 supply of barley (June 1 farm and commercial stocks plus indicated production) is 389 million bushels, about 21 million bushels more than the 1940 supply.

The 1941 oat crop has been indicated to be about 118 million bushels smaller this year than last, but the carry-over of oats is much larger and total supply of oats may be about the same as it was last year. June reports indicated a smaller hay crop this year, but that the total supply will be larger than the 1930-39 average of 89 million tons.

Western range feed conditions on June 1 were the best for that date since 1926. Growth of feed in some areas had been delayed a little by cool weather, but there has been considerable rainfall in most sections, and prospects for summer feed are good. Pastures have been extremely short in the eastern and southeastern part of the country.

Livestock prices have advanced relative to feed prices during the past few months, and livestock-feed price ratios are now much more favorable to livestock producers than in 1940. Feeding ratios probably will continue favorable, at least during the next few months.

CATTLE: Marketings

Cattle slaughter has been somewhat larger this year than last, but prices are higher in response to an unusually good consumer demand for meats. Continuation of this situation during the remainder of 1941 will net cattlemen the largest income in years.

Cattle numbers in the United States tend to fluctuate in cycles of about 15 years. The upward trend in cattle numbers after 1928 was halted by the droughts of 1934 and 1936, and num-

bers declined sharply until 1938. Since then, cattle numbers have been increasing, and as a result of the holding back of breeding stock for herd-building purposes, slaughter of cattle and calves was reduced moderately in 1938 and 1939.

Slaughter increased a little in 1940, and with numbers of cattle now approaching the 1934 level, slaughter can continue to increase at the same time that herds are being increased further. Much of the increase in slaughter this year to date as contrasted with the like period in 1940 has consisted of cows and heifers. But the slaughter of steers is increasing now, since there were many more cattle on feed last winter and this spring than a year earlier.

Cattle feeders reported this spring that marketings of fat cattle would be considerably larger this summer and fall than last.

HOGS: Higher

Hogs have been selling this summer at highest prices in 3 years. Smaller supply and increased demand this year than last have raised prices to profitable levels in relation to prices of feed, a continuing situation that means larger pig crops this fall and next spring. The pig crop this spring was larger than had been indicated by breeding reports last winter.

Hog producers are cooperating in the food-for-defense program of the Federal Government, feeding hogs to heavier weights, and breeding increased numbers of sows for the production of fall litters. On its part, the Federal Government has been supporting prices at profitable levels to producers through the purchase of large quantities of hog products for relief distribution and export to Britain. The Government has bought more than 250 million pounds of pork and lard since its purchasing program was announced in early April.

Slaughter supplies of hogs are decreasing seasonally now; through Sep-

tember the supply is likely to be smaller by 10 to 15 percent than during the same period last year. Marketings through June were larger than had been expected last fall; this was reflected in storage holdings of pork as of June 1 about 200 million pounds more than on that date last year, and of lard about 64 million pounds more than on June 1 last year. Storage stocks usually decline during summer and early fall.

WOOL: Valuable

The most valued wool clip in more than 20 years has been marketed by producers this season. The clip bulked about as large as that in 1940, but prices received by farmers have been about 30 percent higher in response to a high record demand by mills for the production of fabrics for military and civilian needs. Producers' income from wool will be considerably larger this year than the 109 million in 1940. Largest income on record was 147 million dollars in 1918.

United States production of wool this year plus the carry-over on April 1 last has been tentatively indicated at about 735 million pounds—approximately a 10-month supply at the current rate of mill consumption. Imports of wool will decline this summer, but the total for the year will likely set a new high record. Largest recorded imports to date totaled 378 million pounds in 1918.

LAMBS: Record

The 1941 lamb crop is probably the largest on record, but consumer demand is good, and prices continue above a year earlier. Production probably exceeded the 1940 lamb crop of 32.7 million head, since there are more stock sheep on farms and ranches this year than last, and lambing conditions have been favorable. June reports were that sheep and lambs had continued to make good gains in the Western States.

Western ranges improved more than usual during May, and with rains in most sections during early June, summer feed prospects were reported as good. Range prospects in some sections were the best in many years. Reports from the Western sheep States indicated favorable developments of both the early and late lambs this spring. It was indicated that in some sections spring lamb will be ready for market earlier than usual this summer.

Prices probably will average higher this summer and fall than last. Lamb prices usually decline from early summer to early fall as marketings increase, and last year the decline during June and July was quite sharp. This year it is unlikely that prices will decline so sharply, since consumer demand is better and prices of wool are higher.

TRUCK CROPS: Higher

Truck crops have been selling at higher prices this summer than last since supplies have been relatively small and consumer demand unusually good. The season started off with high promise as to supplies, but bad weather intervened, and prices have declined less than they normally do at this time of year. But vegetables respond quickly to good weather, and a few weeks of favorable growing conditions would greatly increase the market supplies. Supplies from market garden areas also are available now.

For similar reasons, the price of potatoes advanced sharply in early June. Drought cut down the prospective yield in the commercial second early and intermediate areas, and market supplies are smaller than at this time last year. Production in the second early group of States was indicated at 4 million bushels, or about 2.2 million bushels less than in 1940. The commercial crop in the first section of intermediate States has been indicated at 7.6 million bushels, or about 3.3 million smaller than in 1940.

The supplies of canned vegetables remaining from the 1940 pack have been rapidly depleted. But it is likely that supplies of truck crops for processing will be generally larger this year than last since the acreage of nearly every crop has been increased and early condition reports indicate good yields.

FRUITS: Increase

Mid-season estimates indicate a slightly larger supply of fruits this year than last. But the consumer demand for all foods is unusually good, and returns to fruit growers should be larger than in 1940. Larger crops of peaches, California dried prunes, apricots, strawberries, citrus, California grapes, and California plums have been indicated for this year; smaller crops of pears, cherries, and apples.

The peach crop for this summer has been indicated at 66.1 million bushels, compared with 54.4 million in the summer of 1940. The California crop is smaller this year, but the peach crop elsewhere in the country is much larger . . . Production of pears has been indicated at 30.3 million bushels as compared with 31.6 million last year. Production of Bartlett pears in the Pacific Coast States will be about the same as in 1940.

Reports in early June indicated that the carry-over of Pacific coast canned pears—five times the carry-over a year ago—will be the largest on record. This will tend to restrict the quantity of pears canned this season.

DAIRY: Increase

Milk production was setting new high records in early June despite the impairment of pastures by drought in the eastern half of the country. Prices were higher than at the same time last year, in response to a greater demand for fluid milk and for milk to be used in the manufacture of evaporated milk and cheese. Usually, the price of milk declines in June.

The situation as to the number of cows, the supply of feed, and prices points to a continued higher level of production of milk and dairy products this year than last. Larger production times higher prices should yield dairymen the best cash income in years. Nineteen forty cash income from dairy products totaled more than 1.5 billion dollars. Income in the first 5 months of 1941 was 711 million dollars as compared with 615 million in the like period of 1940.

Secretary Wickard announced in early June that on the basis of anticipated requirements, American cheese production should be increased by about one-third and evaporated milk by about one-fourth this year over last. Such an increase is equal to about 3 percent of the total milk produced last year.

An increase of 6 to 8 percent in milk production this year over last should make possible the desired increases in evaporated milk and cheese, and still allow some increase in production of butter and in consumption of fluid milk. However, it would be necessary to increase the production of evaporated milk and cheese more than the production of butter.

FATS, OILS: Up

Production of fats and oils from domestic materials may set a new high record this year. Production of butter, cottonseed oil, linseed oil, and peanut oil will be larger this year, and the output of lard and greases, although reduced, will be larger than had been expected earlier in the season.

Fats and oils are higher priced this year than last as domestic demand has increased, and imports of oilseeds and oils have diminished. Imports normally account for 10 to 15 percent of the total supply of fats available for domestic use, and of these imports coconut oil and copra from the Philippines usually comprise one-third. Government buying of lard and dairy products also has helped to strengthen prices.

The Department of Agriculture announced last month a revision in the agricultural adjustment program to enable farmers to increase the production of soybeans by harvesting a larger acreage for beans this year than last without incurring deductions in conservation payments. Officials indicated that the price will be supported, if necessary, at a level of approximately \$1 a bushel for soybeans.

An emergency castor bean seed production program also was announced. This provides for the planting of 1,700 acres of castor beans in 11 counties in the black-land area north and south of Dallas, Tex. Enough seed would be produced to plant 250,000 to 300,000 acres should it become necessary to increase domestic castor oil production next year.

EGGS: Increase

Total production of eggs was larger in the first 6 months of this year compared with last; further increase is expected in the last half of the year in response to favorable prices. Prices of both chickens and eggs have been higher this summer than last, stimulated by increased buying power of consumers and Government purchases in the food-for-defense program.

Production of commercially hatched chicks was 19 percent larger in the first 5 months of this year than in the like period of 1940; heavy bookings of chicks on June 1 for later delivery indicated a strong demand for late-hatched chicks. The demand for turkey poults also has been good. Prices of turkeys have been higher than on corresponding date last year.

The number of young chickens in sample farm flocks increased about 40 birds per flock during May—the largest May increase since 1936. About 8 percent more young chickens were reported on these farms this June 1 compared with last. Increases were reported the country over, varying from 3 percent in the South Atlantic to 20 percent in the Western States.

FRANK GEORGE.

Production, Prices, and National Defense

THE effect of the defense program on production has been to speed up industrial output sharply, calling into use nearly all of the plant which had been idle for nearly a decade. From August 1939 to May 1941 industrial production increased 42.3 percent. This contrasts with an increase of only 23.2 percent during the 21 months following the outbreaks of World War I—in July 1914.¹ The recent increase has been sharpest in durable goods including steel, machinery, and other defense materials, these showing an increase of 66.0 percent in the 21 months. During this same period there was an increase of only 22.9 percent in production of nondurable goods other than those made from farm products, and of 24.3 percent in production of foods, textiles, and tobacco products combined.²

Until quite recently, prices showed less marked changes than did production. In the accompanying charts the current price indexes (on the familiar 1926 base) are compared with the price movements during the comparable period of World War I with the earlier data adjusted to make the 1914 averages equal the 1939 average, in each case. Figure 1 shows the movements in all wholesale prices, in non-farm products, and in farm products. In both periods prices seem to have started a definite upward movement about a year after the war began. But in the next 6 months the advance in the general price level has been only about one-third as fast this time as it was in World War I. Since April 1, however, the rate of price ad-

This time a year ago a comparison was made in *The Agricultural Situation* of economic conditions at the beginning of World Wars I and II. The point was made that conditions differed greatly in these two periods—as to the farm supply situation, fiscal policies of Government, unused industrial capacities, and unemployment. The conclusion was that a sharp price expansion was unlikely for a long time ahead.

Events have moved rapidly since the outbreak of World War II. Production of industrial commodities for defense has expanded far beyond the scope contemplated a year and a half ago, Government spending for defense is exceeding the largest of estimates at that time, more than a million men are in training in newly created Army camps the country over, more recently an agricultural program calling for increased production of a number of concentrated foods has gotten under way.

The accompanying article discusses the comparable situation to date as to production and prices in World Wars I and II . . . Where do we go from here?—Ed.

vance has been almost as sharp as it was a quarter century ago.

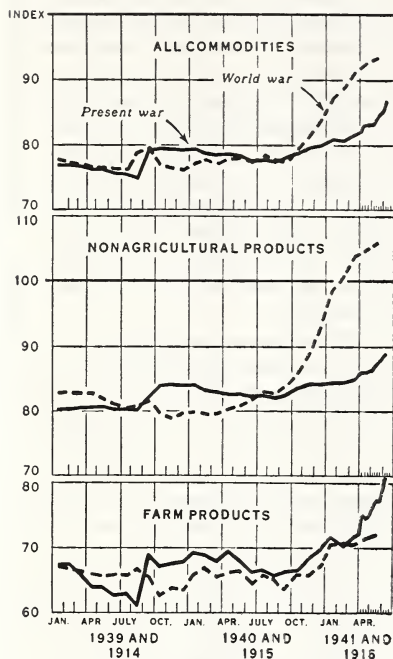
THE composition of the price movement has been quite different, however. In World War I industrial prices shot up rapidly, while farm product prices moved much less. In World War II, prices of farm products advanced more rapidly than in the corresponding period of World War I, while prices of industrial products increased little until this spring.

¹ Based upon index of industrial production compiled from 22 basic series. Federal Reserve Bulletin, Vol. 8 (1922) pp. 1414-21.

² Based upon preliminary estimates of indices of industrial production for May 1941 from Division of Research and Statistics, Federal Reserve Board.

FIGURE 1.-WHOLESALE PRICES OF ALL COMMODITIES, NONAGRICULTURAL PRODUCTS, AND FARM PRODUCTS DURING TWO WAR PERIODS, MONTHLY, AND WEEKLY SINCE APRIL 1941

(PRESENT WAR, 1926=100) (WORLD WAR, 1914-1939 AV.)



Farm prices had been relatively depressed in 1939, however, whereas at the start of World War I they were in about their usual relation to other prices.

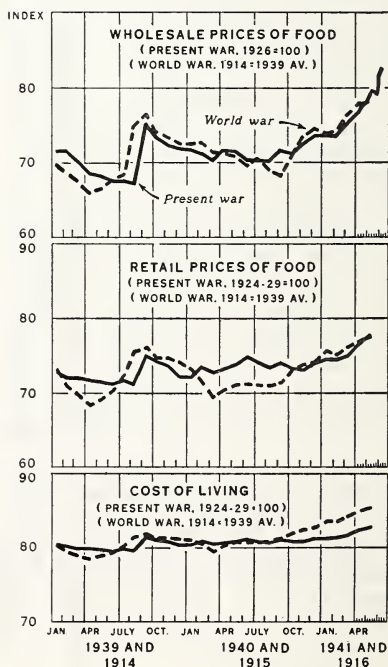
Retail prices, as usual, have been relatively slow to reflect the changes in wholesale prices. Wholesale prices of food in April were 10.7 percent higher than in 1939, retail food prices were up 5.7 percent, but the cost of living as a whole increased about 2.7 percent. This increase in the cost of living is only half as much as in the comparable period, 1914-16 (fig. 2).

Increases in prices of industrial products thus far have been most marked in hides and leather products, and in textile products. But in neither case have the advances been as much as they were 25 years ago (fig. 3). Price increases in metals and chemicals have been moderate as yet, particu-

larly as compared with the skyrocketing of prices of these products in World War I. Apparently efforts of Government and business to prevent general price advances have been at least partially successful. Consumer goods industries, including leather and textiles, were already operating at pretty high production levels when World War II began. Production of these goods could not increase so readily as the other products mentioned, since the unused plant capacity in these industries was relatively small.

ALMOST all price series show a rapid upward movements since April 1, 1941. The rise in prices of farm products has been due in part to the policy of the Department of Agriculture to raise some prices to stimulate needed increases in future production and to Congressional action in raising the loan rates on certain export commodities, but probably in

FIGURE 2
PRICES OF FOOD AT WHOLESALE AND RETAIL, AND COSTS OF LIVING, DURING TWO WAR PERIODS

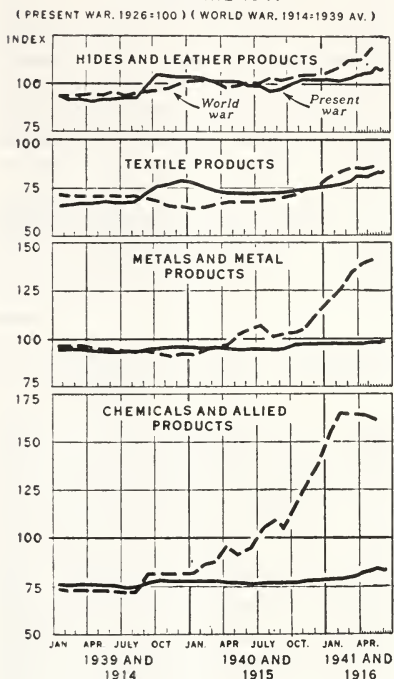


much larger part to the increasing demand due to the rapid rise of consumer buying power. The rise in prices of industrial products may reflect in part the fact that we have drawn on most of the available unused industrial capacity, and are now having to call into use obsolete high-cost plants; in part to the increasing shortage of shipping space, especially in coastwise movement, and the higher costs of the few ships available or of alternative methods of transportation; and in part to the fact that in some industries wage increases or the anticipation of wage increases are beginning to be reflected in higher selling prices.

Although prices of different commodity groups have moved at differing rates during the past year, they are not as yet seriously out of line with one another, as compared with their relative position prior to the 1929 depression. In the most recent week the all-commodities wholesale-price average stood about 87 percent of the 1926 base, nonagricultural products at 89 percent, wholesale prices of farm products at 81 percent, and wholesale prices of the several groups of industrial products at 84 to 108 percent. Retail food prices were meantime at 78 percent of the 1924-29 average, and the cost of living as a whole at 83 percent. The more rapid rise in prices of farm and food products has thus closed some of the gap between their prices and the prices of other products which opened up during the 1929 depression, but has not yet brought them back up fully into line with the prices of nonfarm products, either at wholesale or at retail.

NOW we face a situation where defense requirements are beginning to compete with civilian needs. Further imperative expansion in defense may necessitate a reduced output of automobiles, refrigerators, and other consumers' goods which use raw materials, metal-working equipment, and labor needed for defense produc-

FIGURE 3.-WHOLESALE PRICES OF SELECTED GROUPS OF INDUSTRIAL PRODUCTS DURING TWO WAR PERIODS. MONTHLY, AND WEEKLY SINCE APRIL 1941



tion. This situation would not necessarily mean sharp rises in industrial prices, since material reductions in output of some consumers' goods as a result of further expansion of defense production might check the growth in consumer incomes as well as in total goods production. New taxes or savings may also reduce consumer incomes. But whether or not prices continue to rise, the fact is that we are running into many bottlenecks in goods production. The continued existence of these bottlenecks will depend in part upon whether we take far-reaching action now to expand our industrial plant, especially for the production of basic raw materials, sufficiently to use effectively all our potential workers. A continuing rise in industrial prices in the face of millions of workers still unemployed would be only one symptom of our failure to meet this challenge.

Farmers have not as yet fully recovered from the ill-effects of the price spree of World War I. Although they desire and are entitled to reasonable income from their work, neither farmers nor workers could derive lasting gains from price rises that took away in continuously rising costs all that was gained from higher prices or wages. Farmers, therefore, have a vital stake in expanded industrial capacity, increased farm output of the products in demand today, allocation and priority rules, price

regulations, and in other programs or actions designed to prevent a general price inflation which would take away in rising costs as much as it would seem to give in rising prices. Effective action in these fields will enable farmers to participate in the gains from fuller production which defense is causing, without suffering from the inevitable aftermath of a spiral of skyrocketing prices and costs.

MORDECAI EZEKIEL and
VIRGINIA D. REEVE.

“Here Are Today’s Livestock Markets—”

TALK to a livestock producer who has been in business since the turn of the century—one of the old timers—and he will admit that livestock marketing has been vastly improved since 1905, say. Farmers are better informed nowadays, he will tell you, especially when it comes to accurate and timely information on such factors as livestock production, rate of slaughter, and consumer demand for meat. He will describe the development of the livestock market news service and assure you that it didn’t come a day before it was needed.

If your livestock producer is a real veteran, he can remember a time when the producer’s only source of market information was the incomplete and conflicting reports compiled by trade groups. These reports were not utterly worthless but they were inadequate. Finally, in response to an insistent demand, the Federal Government stepped in—that was along in 1918—and established a workable market news service. That service has been expanded until today it covers most of the important livestock markets of the country.

ANY livestock producer or feeder can obtain adequate market in-

formation now. Daily market reports—single mimeographed sheets—are mailed out by the thousand from the branch offices of the Agricultural Marketing Service at 28 public livestock markets, and from several large producing areas where “direct trading” is important. More than 300 radio stations regularly broadcast market reports one or more times daily. And most newspapers, particularly in the major livestock-producing areas, carry market summaries as a regular feature.

Livestock producers and feeders as a general rule do not have to be “sold” on the market reports. As a matter of fact, a great many farmers are a little inclined to take the reports for granted, they have used them for so long. When they read in the daily report that “good to choice yearlings and light steers moved freely, selling at \$10.25–\$11.25 and better,” they are likely to be unaware of the organization that makes the reports possible. Nevertheless, that organization is on the job every day so that farmers can keep in close touch with their markets.

Most of the activities of the market news service are concentrated in the great livestock receiving centers, such as Chicago, East St. Louis, Kansas

City, Omaha, and South St. Paul. Here it is that the factors of supply, demand, and quality are reflected in bidding and asking prices, and here it is that the intangible, but existent forces of "market sentiment" play such an important part. It is the function of the livestock market news service to observe the happenings in the market and to pass them on, in usable form, to the farmers of the Nation.

THE market day begins early for the reporting organization, which operates on the principle that "early to bed and early to rise, keeps the livestock industry market wise." At Chicago, for example, an employee comes to work at 4:30 a. m., when most of the city is asleep, and gets in touch with each of the 26 railroad terminals. The railroads report the number of carloads of livestock that each road expects to deliver to the Chicago market in time to be included in the day's receipts.

Estimates of the numbers of cattle, calves, hogs, and sheep that will be available on the Chicago market that day are tabulated by 6 a. m. and are immediately flashed over an 8,000-mile leased-wire circuit and by commercial wire to the other livestock market reporting offices. Information on the day's receipts is also made available to the newspapers, radio stations, and other news-disseminating agencies. Market receipts are an extremely important price-making factor.

The hog market reporter has completed his first rounds of the market by 8:30 a. m. and has released his first hog flash, which shows the tone of the market and the trend of prices. The reporter doesn't obtain his information by hearsay. He is right down in the thick of the trading. He observes the activity of buyers and sellers, checks on their bid and asking prices, and confers with them fre-

quently to learn what they are doing. In this way he quickly senses the trends and shifts, not only of prices but of market sentiment as well. This information on the tone of the market is included in the daily report, perhaps expressed this way: "Order buyers and shippers operated freely most of the time, the only hesitancy being on the heavier offerings."

THE second hog flash is released at 9:20 a. m. and shows the latest developments in hog trading. The market is never static. It ebbs and flows. Prices that start out "weak" may suddenly turn "strong" for no apparent reason, so the reporter must keep on the job.

By 9:30 a. m. the meat market reporter has got in touch with a number of packers, branch house salesmen and retailers and has learned what supplies are available, the character of demand, and the trend of prices. This information is condensed in a brief report that is flashed to the large consuming markets along the Atlantic coast and the great livestock markets in the producing areas.

Cattle, hog, and sheep market flashes are released at 10 a. m. by the reporters covering those markets. These flashes are based on all the information available on supplies, demand, tone of the market, trade conditions, and prices available up to that time.

A complete market report is released at 10:30 a. m. for transmission over the leased wire. This report contains detailed information on the cattle, hog, and sheep markets and includes a comprehensive series of price quotations segregated by classes and grades. Since livestock standardization work has been in progress, standard market classes and grades have been developed for all kinds of livestock, and these are uniformly applicable at all markets where livestock is bought and sold.

AN advance estimate of the number of head of each kind of livestock expected to arrive for the following day's market is released at 11 a. m. The information contained in this report is furnished through the voluntary cooperation of the railroads.

The closing market wire is released between 12:30 and 1 p. m. This release covers all three classes of livestock and contains statements on the tone and prices prevailing on the late market, shippers' purchases, estimated holdovers of hogs, and prospects for a clearance of cattle and sheep. This report just about winds up the day for the market reporters.

The mimeographed reports issued by the 30 field offices emphasize two kinds of information: Developments on the local market as collected by the market news reporters, and information that has been received from other offices either by wire or mail. With this system an office is not limited to its own material but can and does amplify its reports by the addition of information gathered at other points. Although each office stresses information regarding its own market more than material received from other markets, the information issued on "outside" markets is detailed enough for adequate comparisons. The market news offices publish a vast amount of market information, not only on livestock, but on meat and wool marketing as well.

NOT all livestock producers and feeders sell their animals at central markets, of course. A considerable number is sold locally, at concentration yards, local packing plants, or on the farm. This "direct" method of marketing has increased greatly in recent years and the market

news service has been adapted to the new development. Areas in which direct buying and selling operations are reported include central and northern Iowa and southern Minnesota, which comprise the most important swine-producing area of the country; the Intermountain and Pacific Coast States, where sheep and lamb production is especially important; and the Southeastern States of Georgia, Florida, and Alabama, where cattle and hog production is increasing.

Hog buying operations at 10 packing plants and approximately 22 concentration yards in interior Iowa and southern Minnesota are covered by an office at Des Moines, Iowa. Offices at Casper, Wyo., Ogden, Utah, and San Francisco, Calif., report the direct and contract sales of sheep and lambs in the Intermountain and Pacific Coast States. Cattle and hog buying and selling operations in the Southeast are reported by offices located at Thomasville, Ga., and Montgomery, Ala. In this area, buying and selling operations are carried on at a number of packing centers and at various auction markets, stockyards, and cooperative sales yards.

Reporters who cover the direct buying and selling operations over a wide area must work somewhat differently from those employed in the central markets. They use the telephone extensively in making contacts with buyers and sellers; they make frequent trips through their territory, calling at packing plants and sales yards and talking with those in a position to supply information. All—the reports at county points, and at market centers—spell out "Here are today's livestock markets."

HARRY HENDERSON,
Agricultural Marketing Service.

The number of stock sheep on farms and ranches on January 1 totaled 49.7 million head. This was nearly 1 million head more than a year earlier. It was the largest number since 1884. Approximately half (492,000 head) of the increase during 1940 was in Texas. Numbers increased 259,000 head in the remaining Western Sheep States, and 212,000 head in the Native Sheep States. Sheep production has increased greatly in Texas during the last 20 years.

Income of Typical Winter Wheat Farms

FARMERS in the Winter Wheat Area have maintained their net farm incomes during the past 30 years by changing their farm organizations to keep up with technological developments. This is the story told by an index of net farm income for specific types of farms in the Winter Wheat Belt. Many small farmers have been forced out—and with some depopulation of large portions of the area—more land has been available to those farmers who have stayed. These remaining farmers have increased the size of their farms for the efficient use of machinery and have had favorable incomes, relative to 1910-14, in most of the years since 1914 (fig. 1).

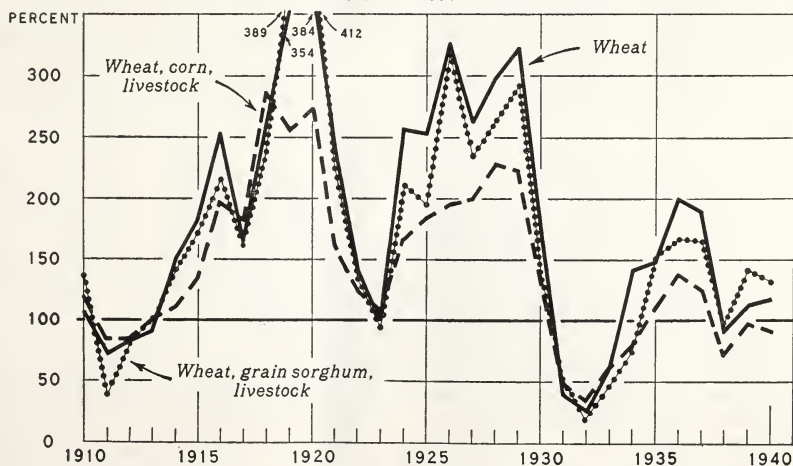
The years in which poor incomes occurred were separated into 3 periods, the worst covering the drought-depression years 1931-34. Ten years prior to this—in 1923—was the first unfavorable year with crops poor and prices relatively low. But even in 1923, the income index fell below 100 percent only for the wheat-grain sorghum-livestock type of farm. Favorable incomes were indicated for the

next few years, but this was stopped suddenly in 1931 when the depression drove prices to record lows. From 1931 through 1934, low prices combined with drought held incomes at low levels. From 1934 to 1937, returns were more favorable, but in 1938 net incomes were again reduced.

WHEN net farm incomes are compared (fig. 1), it is evident that the corn-livestock-wheat farm has had a less favorable income record than the other two types since 1933, and only in 1932 and 1933 was the wheat-corn-livestock system relatively as well off. The wheat-corn-livestock farmers' incomes did not fluctuate as much as either wheat or wheat-grain sorghum-livestock type farmers during the latter period. Differences in emphasis on wheat and other feed crops may be an added reason for the unfavorable position of the corn-livestock type (see table). Although the income of the wheat-grain sorghum-livestock type has been relatively the most favorable since 1938, it occupied a similar position only one other time since 1920.

FIGURE 1.—INDICES OF NET FARM INCOME OF WINTER WHEAT AREA FARMS BY TYPE OF FARM

(1910-14=100)



This was in 1931, when southwestern Kansas and the panhandle areas of Texas and Oklahoma harvested their largest wheat crops.

Although the indices reflect the fact that typical farmers in the winter wheat area have had relatively high incomes except for the drought-depression period, production and income have varied widely from year to year. Obviously, farmers are forced to adjust their personal living in accordance with these highly fluctuating incomes. Such adjustments are frequently hard to make.

The proportion of the current crop sold by December 31 differs from year to year. During the period 1910 to 1940 from 59 to 89 percent of the wheat produced was sold during the calendar year in which it was produced. Some wheat produced in 1931 was sold even as late as 1936. Corn-livestock farmers generally carried over a larger proportion of their wheat than wheat farmers or grain sorghum-livestock farmers. With indices computed on a calendar year basis net incomes fluctuated less than crop production.

A STUDY of the typical farming systems, upon which this net income index is based, reveals some striking technological changes such as: (1) An almost complete shift from horse operation to tractor operation; (2) changes in harvesting equipment; (3) fairly steady increases in acreage operated to adapt systems to the more efficient possibilities of mechanized farming.

Wheat farms are now almost entirely operated by tractors, whereas in 1910 draft animals furnished the drawbar power. Typical wheat farms were the first to make the shift, but wheat-grain sorghum-livestock farmers and wheat-corn-livestock farmers soon followed the general trend toward mechanization. Methods of wheat harvest have changed from binder or header harvest to nearly 100 percent combine harvesting.

The major expense on these farms is for power and machinery operation

and upkeep; tractor expense was 34 percent of total expenses on wheat farms and about 25 percent on the other two types (1937-39 averages). Autos, trucks, and other machinery together made up about 18 percent of the total expenses in the same period. Increased mechanization has permitted the operators of these farms, with the exception of grain sorghum-livestock farmers, to operate larger farms with about the same amount of hired labor. Although the total cost of operation has increased, the size of farm also has increased, and the average cost per acre has remained about the same.

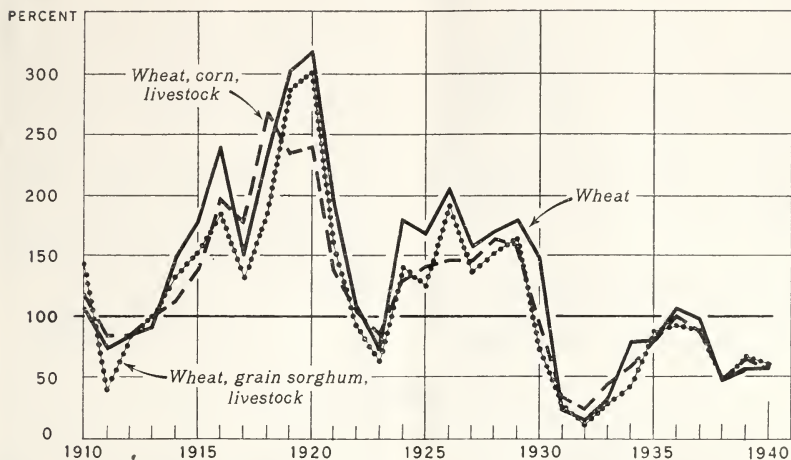
UPWARD trends in size of farm have been in evidence, but more pronouncedly during two periods. The first upward surge in size started

Organization of Typical Farms in
Winter Wheat Area, 1937-39

Item	Unit	Type of farm		
		Wheat	Wheat, corn, livestock	Wheat, grain sorghum, livestock
Acreage in farm.....	Acres..	567	520	579
Acreage in cropland.....	Acres..	503	398	449
Percentage of farm in cropland.....	Pct....	89	77	78
Wheat: (Acres planted.).....	Acres..	394	226	294
(Harvested).....	Pct....	77	81	74
(Yield per planted acre.).....	Bu....	8.1	8.8	7.6
Corn.....	Acres..	18	43	3
Barley.....	Acres..	11	24	16
Oats.....	Acres..	5	15	11
Grain sorghum.....	Acres..	32	21	69
Forage sorghum.....	Acres..	7	22	17
Other hay.....	Acres..	4	19	10
Idle and fallow.....	Acres..	32	22	29
Milk cows.....	No.....	3.0	6.9	7.0
Pork sold.....	Cwt....	4.3	61.2	46.0
Beef sold.....	Cwt....	10.7	51.8	47.0
Poultry.....	No.....	92	149	106
Proportion of gross income from various sources:				
Wheat.....	Pct....	67.0	41.1	46.6
Other crops.....	Pct....	9.3	10.2	8.7
Livestock.....	Pct....	4.5	30.8	24.3
Livestock products.....	Pct....	4.2	8.5	7.8
AAA.....	Pct....	15.0	9.4	12.6
Total.....	100.0	100.0	100.0

FIGURE 2.—INDICES OF NET INCOME PER 100 CROP ACRES IN WINTER WHEAT AREA FARMS BY TYPE OF FARM

(1910-14=100)



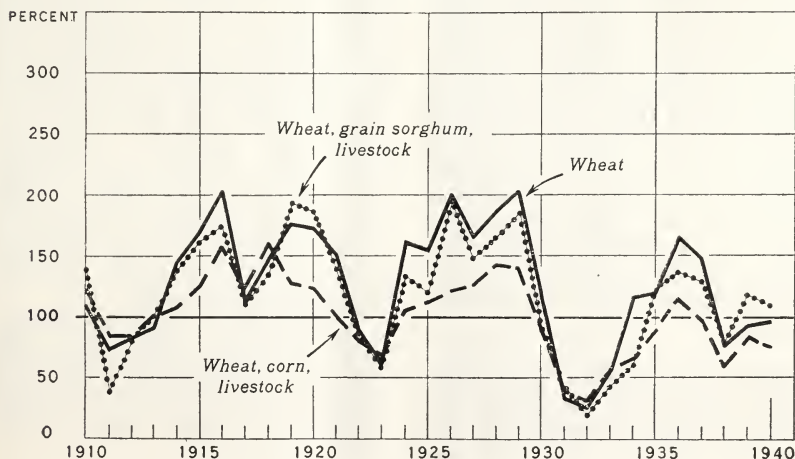
during World War I and continued until 1929. During the 1931-34 period total acres remained about the same, and in some areas, particularly the Southwest where the wheat-grain sorghum-livestock farms are more prevalent, there was a tendency toward smaller farms. Since 1936 the trend in size has again been upward. By 1940 typical wheat and wheat-grain sorghum-livestock farmers were oper-

ating twice as many acres as in 1910, and typical wheat-corn-livestock farmers were operating 50 percent more acres than in 1910.

The degree of adjustment in size has differed considerably among the types of farms. This difference affects the comparison of net farm incomes, but can be obviated by comparisons of income per 100 acres. Figure 2, constructed on a 100-crop acre basis,

FIGURE 3.—INDICES OF PURCHASING POWER OF NET FARM INCOME OF WINTER WHEAT AREA BY TYPE OF FARM

(1910-14=100)



indicates that most of the differences (in recent years) in the indices of net farm income have been caused by the degree of acreage adjustments. Adjustments from the quarter-section homestead were farther advanced in the older areas by 1910 where the wheat-corn-livestock type is more prominent than in the newer areas where the wheat and wheat-grain sorghum-livestock farms are concentrated.

WHAT do these net farm incomes mean in terms of purchasing power? They show that corn-live-

stock farmers have had a purchasing power of over 100 in 16 of the past 31 years, but only once during the past 10. Wheat farmers have been over 100 percent of their 1910-14 purchasing power in 20 of the 31 years, and their purchasing power has been more favorable than for the other two types in 15 of the 31 years. The wheat type farmers' purchasing power exceeded 200 percent in 1916, 1926, and 1929. Since 1938, the wheat-grain sorghum-livestock has shown the most favorable purchasing power (fig. 3).

WILLIAM D. BLACHLY.

WYLIE D. GOODSELL.

FOOD CONSUMPTION

During World War I the people in this country reduced their consumption of wheat, sugar, and butter. This was done in order to send food to our allies and our soliders in France. Rice and other grains were substituted for wheat in the American dietary, sirup and honey for sugar, and other fats for butter. Consumption of coffee, tea, and cocoa was increased.

* * *

After World War I the consumption of sugar increased sharply, the consumption of butter got back almost to pre-war levels, but the consumption of wheat did not regain the pre-war volume. Sugar went up from an average of 80 pounds (raw basis) for each person in 1918 to 117 pounds in 1930, butter went from 14 pounds to better than 17 pounds during this period, but wheat flour in terms of grain rose only slightly—from 3.9 bushels to a little more than 4.1 bushels. Prior to World War I the consumption of wheat had been 4.9 bushels.

* * *

During the depression of the early 1930's there was a decrease in per capita consumption of all foods, but since 1934 the consumption of food

has increased. Increases have been especially marked during this period in consumption of dairy products, fats and oils, citrus fruits, fresh vegetables, and sugar. The total supply of food will be larger this year than last. Production of milk, dairy products, and meats will be the largest on record. Under the food-for-defense program, producers are being urged by the Department of Agriculture to increase the production of these and other foods this year.

* * *

People eat about the same total quantity of food now as they did 30 years ago, but the composition of the dietary has changed. Consumption of wheat and other cereals, potatoes and apples, beef, veal, and tea has declined; but consumption of vegetables (other than potatoes), citrus fruits, sugar, poultry, eggs, milk, manufactured dairy products (especially ice cream), edible fats and oils (other than lard and butter), cocoa, chocolate, and coffee has increased.

Consumption of lamb and mutton, pork and lard, butter, and sweet potatoes has varied during the last 30 years, but the general level of consumption of these foods has not changed.—F. G.

New Products for Old

FOUR Regional Laboratories for Research on the Industrial Utilization of Farm Products were provided for by an act of Congress in 1938. These laboratories—the Eastern at Philadelphia, the Southern at New Orleans, the Northern at Peoria, Ill., and the Western at Albany, Calif.—have been built and are now partly equipped and staffed. To each has been assigned work on a number of the more important crops in the area it is designed to serve.

The Eastern Laboratory will work primarily on dairy products, potatoes, fruits and vegetables, tobacco, tanning materials, and animal fats and oils; the Southern on cotton, sweetpotatoes, and peanuts; the Northern on corn, wheat, and farm residues, such as stalks, straws and hulls; and the Western on fruits and vegetables, wheat, potatoes, alfalfa, and poultry products. The laboratories have been working for some time assembling needed information; in some cases work has been going on for several months, but naturally no reportable results are available at this early date.

THE work of these regional laboratories represents the first concentrated and sustained effort towards the industrial utilization of farm products. But it is by no means the first Department of Agriculture research falling into this classification. The first chemical research in the Department, in 1862, was on the utilization of grapes. Since then various projects have brought out many facts important in industrial utilization of materials that are products of the soil.

Citrus growers have received conspicuous benefits in recent years from chemical research. It was learned that green-colored but fully mature tree-ripened oranges could be made a uniform yellow, and consequently

With increasing frequency announcement is made of the development of new varieties of farm products or the discovery of new properties of old ones. These are the achievements of agricultural and industrial scientists engaged in scores of laboratories the country over in the blazing of new trails in the production and processing of farm commodities.

Achievements include important improvements in the quality, and additions to the variety, of the food supply. Continually increasing and expanding are the industrial uses for food, feed, and fiber crops. Of especial significance for the years ahead is the way in which our agricultural and industrial scientists are seeking to utilize the surpluses of products formerly produced for export.

The accompanying article is the first of a group containing outstanding examples of scientific research in these fields by the various agencies of the United States Department of Agriculture.—Ed.

more marketable, by taking out with ethylene gas the green color associated with the natural yellow. This method, now in general use on citrus fruits, cost the taxpayers about \$4,000 for the research and is estimated to be worth about \$4,000,000 a year to Florida growers alone.

The process of deaeration and pasteurization, developed in the Department, gave great impetus to the production and marketing of canned citrus juice. Producers of other fruit juices for market are beginning to benefit from this research. Grapefruit juice production has increased enormously. In Texas where 2,235,-

000 cases were packed in the 1935-36 season, the 1939-40 pack was 9,199,000 cases. The new method is even more important to producers of orange juice since the original canned product was less acceptable than the canned grapefruit juice of that time. In 1930-31 only 50,000 cases of canned orange juice were produced, but in 1939-40 the production had reached 4,000,000 cases.

Various citrus products have been developed at laboratories in California, Florida, and Texas. The United States has become practically independent of foreign sources for citric acid and essential oils of orange and lemon as a result of this work. Pectin is being made on a large scale from citrus fruit. As to the value of these products (citric acid, essential oils and pectin), the California Citrus Exchange reports that the growers now receive an additional \$2,500,000 a year.

A few years ago it was said that good cucumber pickles could not be produced in the South on account of high temperatures in the pickle curing season. The growing of cucumbers in this region was confined largely to production for the fresh vegetable market until recent research in cooperation with the North Carolina Experiment Station showed that, with a modification of the pickling methods used in the North, quality products could be produced under Southern conditions. It is now possible and practical to pack high-quality fermented cucumber pickles, including dill pickles, in the South. Many farmers are benefiting from this new development in North Carolina. As a direct result, North Carolina has become the largest pickle producing State in the South and the fourth largest in the country. The growing of cucumbers in North Carolina is worth annually about \$600,000.

Sorghum sirup is now a greatly improved and more uniform product as a result of the Department's research.

A new method uses an extract of barley malt to prevent scorching and jellying, caused by starch, and a yeast extract to control the tendency to crystallize or "sugar." This process, which includes the use of improved sirup-making equipment, is being extensively used in Alabama.

CHEMICAL research at various times has dealt with the development of farm products or byproducts for feed. The most recent work of this kind has had to do with the sweet-potato, which has become important as a possible large-scale source of carbohydrate feed, as well as of starch of the type now imported largely from the East Indies for industrial purposes. During the past season a cooperative sweetpotato starch plant at Laurel, Miss., made 2,700,000 pounds of starch. Twelve hundred cooperating farmers had produced the raw material.

One result of this research has been the testing of byproduct sweetpotato pulp as stock feed and the beginning of experimental work on converting ground sweetpotatoes directly into a dried feed. It has been announced that the State of Alabama is about to start a plant for making sweet-potato feed at the Atmore prison farm. For this purpose the State plans to grow about 500 acres of sweet-potatoes at the farm.

THERE are many examples of results of research more strictly in the industrial field.

The gay, fast colors that men and women are wearing today are largely the result of basic research by Government chemists who developed new technical methods for the economical production of intermediates required for the manufacture of fast and brilliant dyes for cotton. This research, it is estimated, has expanded the cotton market several million dollars a year.

Recently, the Patent Office granted a patent to Department employees,

who assigned it to the Secretary, on a process that opens up further possibilities for industrial uses of milk, corn, and sugarcane. The patent covers an improved method for using the lactic acid which can be made from these farm products for the preparation of artificial resins. These new resins belong to a class of plastics which are used mainly in paints, lacquers, and varnishes. Resins of this character have pretty well revolutionized the art of painting automobiles.

As a result of research by Department chemists on corn cobs and other crop wastes, oat hulls are now used in making furfural, a valuable solvent used in the purification of rosin, for the production of lacquers and varnishes, and as a basic material in the manufacture of synthetic resins.

Chemists have also worked out waterproofing and preservative treatment for farm fabrics. The purpose has been to devise and improve waterproofing and preservative treatments for cotton fabrics exposed to the weather on farms and elsewhere. The chemists have also developed methods for lightproofing, mildewproofing, and fireproofing cotton fabrics. Some of these methods are now in commercial use.

At the Department's soybean laboratory at Urbana, Ill., progress

has been made in the development of paints, varnishes, and enamels from soybean oil, and plastics from soybean meal, which is the residue after the oil is extracted. Resulting, at least in part, from the work of this laboratory, substantial quantities of ready-mixed paints and enamels containing soybean oil are now sold widely. Other research has contributed to wider use of soybean meal and its protein which are going into a variety of products, including plastics and adhesives.

One paint company has made and sold more than a million gallons of soybean-oil paint. Since the natural soybean oil does not dry fast, methods of making it dry faster in paints and varnishes have been developed. The soybean paint is used not only for houses and barns, but is now being tried out experimentally for marking highways and streets. The laboratory has developed reasonably quick-drying varnishes that have stood up as well as other varnishes. Although most of the meal left after the oil is extracted is still used for feed and food purposes, new industrial uses are developing, among them a protein sizing for clear paper for packages and a leather dressing.

W. W. SKINNER,

Bureau of Agricultural Chemistry and Engineering.

What Is a Cow Worth?

IN 1940 the price of milk cows as reported by the Agricultural Marketing Service averaged \$61.00 per head. This was the highest price since 1930 and compares with the recent low of \$32.60 in 1934. The price of cows increased 87 percent from 1934 to 1940. In the same period the general level of prices paid to producers for farm products rose only 9 percent.

In the past 6 years there has been

an unusually rapid rise in the price of milk cows in relation to the general level of prices of agricultural products. During the past 2 years (1939-40) the price of cows averaged higher in relation to the general level of prices of farm products than in any 2-year period on record, since 1910. Beef cattle have also been relatively high in price. With favorable prices for cattle, farmers have saved a large number of heifer calves, held back

breeding stock, and expanded their herds. The number of milk cows has increased, the number of young dairy stock on farms is relatively large, and further increases in cow numbers are in prospect.

IN 1940 the price of butterfat averaged 28.5 cents per pound. The price of a milk cow (\$61.00) was equivalent to the price of 214 pounds of butterfat. During the three decades 1910-40 the price of cows averaged the same as 180 pounds of fat. During 1939 and 1940 the price of cows was unusually high in relation to both milk and butterfat and higher in relation to these products than can be maintained over a long series of years (table 1).

During the 31-year period 1910-40 the price of cows averaged the same as the price of 46.5 cwt. of feed grains. In the past 2 years they averaged the same as the price of 63.3 cwt. of feed grains. The price of cows has been high in relation to feed grains, byproduct feeds, and hay. Cow prices have been high in relation to the feeds required to produce a cow from a heifer calf.

In the three decades 1910-40 the price of a pound of butterfat averaged the same as the price of 25.9 pounds of feed grains. In 1939 and 1940 the price of butterfat averaged the same as 27.8 pounds of feed grains or 7

percent higher than the long time average. The price of butterfat in 1939-40, however, was somewhat below average in relation to prices of byproduct feeds (table 2). The relationship between dairy prices and feed prices in 1939-40 does not explain why milk cows were so high in relation to milk and butterfat and feeds.

A milk cow has a value for converting feeds into milk and also a value as a meat animal. In the 31-year period 1910-40 the price of milk cows averaged the same as the price of 936 pounds of beef cattle, on the basis of prices paid to farmers. During the cycle in cattle prices from 1910 to 1925, the price of milk cows averaged the same as the price of 955 pounds of beef cattle. In the following cycle 1926-34, approximately the same relationship was maintained. During the last 2 years, however, the price of a milk cow averaged the same as only 844 pounds of beef cattle or 10 percent less than the long-time average. Prices of milk cows in the past 2 years were low in relation to beef cattle, and also low in relation to prices of cutter and canner cows (table 1).

In 1939 and 1940 the relatively high price of cattle for meat was the principal factor in keeping the price of cows high in relation to prices of milk, butterfat, and feeds. The cycle in the purchasing power of milk cows,

Table 1.—Amount of Various Farm Products Equivalent in Price to a Milk Cow, Selected Periods 1910-40¹

Product	Unit	Period				Index numbers 1910-40=100			
		1910-40	1910-25	1926-34	1939-40	1910-40	1910-25	1926-34	1939-40
Butterfat.....	Lb....	180	172	185	228	100	96	103	127
Milk (wholesale).....	Cwt....	29.3	28.6	29.7	33.9	100	98	101	116
Feed grains.....	do....	46.5	40.2	54.6	63.3	100	86	117	136
Byproduct feeds ²	do....	³ 38.4	⁴ 35.2	41.8	45.0	100	92	109	117
Hay.....	Ton....	5.3	4.6	5.8	8.2	100	87	109	155
Beef cattle.....	Lb....	936	955	965	844	100	102	103	90
Cutter and canner cows ⁵	do....	1,480	1,504	1,588	1,239	100	102	107	84
Veal calves.....	do....	713	714	730	692	100	100	102	97

¹ Based on prices received by farmers.

² Average 1913-40.

⁴ Average 1913-25.

³ Based on wholesale prices of byproduct feeds.

⁵ Based on prices of cutter and canner cows at Chicago.

Table 2.—Amount of Feeds Equivalent in Price to One Pound of Butterfat, Selected Periods 1910-40 ¹

Product	Unit	Period				Index numbers 1910-40=100			
		1910-40	1910-25	1926-34	1939-40	1910-40	1910-25	1926-34	1939-40
Feed grains.....	Lb.....	25.9	23.9	29.4	27.8	100	92	114	107
Byproduct feeds ²	do.....	³ 21.3	⁴ 20.7	22.5	19.8	100	97	106	93

¹ Based on prices received by farmers.

² Average 1913-40.

³ Based on wholesale prices of byproduct feeds.

⁴ Average 1913-25.

which is 14 to 16 years long, is due primarily to the changes in the value of a milk cow for meat rather than to the changes in the value for converting feeds into milk.

A marked increase in cattle numbers is under way and a larger slaughter of cattle is in prospect. More

milk cows are also in prospect. These developments will tend to depress the price of milk cows in relation to other commodities. If the general level of prices rises during the next few years, the price of milk cows may not decline, but they would not be expected to increase as much as the general average.

E. E. VIAL.



United States: Exports and Imports of Specified Agricultural Commodities, September-April 1939-40 and 1940-41 and April 1940 and 1941 ¹

Commodities	Unit	September-April		April	
		1939-40	1940-41	1940	1941
Exports:					
Pork:		<i>Thousands</i>	<i>Thousands</i>	<i>Thousands</i>	<i>Thousands</i>
Cured pork ¹	Lb.....	40,885	8,887	2,353	1,101
Other pork ²	Lb.....	65,501	15,300	2,604	1,829
Total pork.....	Lb.....	106,386	24,187	4,957	2,930
Lard, including neutral.....	Lb.....	181,032	117,885	18,849	22,375
Wheat, including flour.....	Bu.....	33,995	26,712	3,837	4,854
Apples, fresh ³	Bu.....	2,717	692	96	51
Pears, fresh.....	Lb.....	64,028	14,573	250	342
Tobacco, leaf.....	Lb.....	224,290	99,644	15,864	13,898
Cotton, excluding linters (500 lb.).....	Bale.....	5,773	886	363	77
Imports:					
Cattle.....	No.....	418	511	93	93
Beef, canned, including corned.....	Lb.....	53,415	39,088	4,536	6,998
Hides and skins ⁴	Lb.....	218,141	303,723	22,601	50,212
Barley malt.....	Lb.....	45,089	24,485	6,754	3,115
Sugar, cane (2,000 lb.).....	Ton.....	2,071	2,199	293	492
Flaxseed.....	Bu.....	8,623	7,866	1,199	1,286
Tobacco, leaf.....	Lb.....	40,535	43,372	5,269	5,212
Wool, excluding free in bond for use in carpets, etc.....	Lb.....	129,456	334,754	12,466	72,769

¹ Corrected to June 17, 1941.

² Includes bacon, hams, shoulders, and sides.

³ Includes fresh, pickled or salted, and canned pork.

⁴ Includes baskets, boxes, and barrels in terms of bushels.

⁵ Excludes the weight of "other hides and skins" which are reported in pieces only.

Office of Foreign Agricultural Relations. Compiled from official records, Bureau of Foreign and Domestic Commerce.

Economic Trends Affecting Agriculture

Year and month	Indus- trial pro- duction (1935- 39=100) ¹	Income of indus- trial workers (1924- 29=100) ²	Cost of living (1924- 29=100) ³	Whole- sale prices of all commod- ities ⁴	(1910-14=100)			Farm wages	Taxes ⁶
					Prices paid by farmers for commodities used in ⁵				
					Living	Pro- duc- tion	Living and produc- tion		
1925.....	91	98	101	151	164	147	157	176	270
1926.....	96	102	102	146	162	146	155	179	271
1927.....	95	100	100	139	159	145	153	179	277
1928.....	99	100	99	141	160	148	155	179	279
1929.....	110	107	99	139	158	147	153	180	281
1930.....	91	88	96	126	148	140	145	167	277
1931.....	75	67	88	107	126	122	124	130	253
1932.....	58	46	79	95	108	107	107	96	219
1933.....	69	48	75	96	109	108	109	85	187
1934.....	75	61	77	109	122	125	123	95	178
1935.....	87	69	79	117	124	126	125	103	180
1936.....	103	80	80	118	122	126	124	111	182
1937.....	113	94	83	126	128	135	130	126	187
1938.....	88	73	81	115	122	124	122	125	186
1939.....	108	84	80	113	120	122	121	123	190
1940.....	122	95	81	115	121	124	123	126	-----
1940-June.....	121	90	81	113	121	125	123	-----	-----
July.....	121	93	81	113	-----	-----	122	129	-----
August.....	121	96	81	113	-----	-----	122	-----	-----
September.....	125	99	81	114	121	123	122	-----	-----
October.....	129	101	81	115	-----	-----	122	129	-----
November.....	133	104	81	116	-----	-----	122	-----	-----
December.....	139	108	81	117	122	125	123	-----	-----
1941-January.....	140	111	81	118	-----	-----	123	124	-----
February.....	141	111	81	118	-----	-----	123	-----	-----
March.....	143	113	82	119	124	125	124	-----	-----
April.....	140	112	82	121	-----	-----	124	138	-----
May.....	149	123	83	124	-----	-----	125	-----	-----
June ⁷	-----	-----	-----	128	-----	-----	126	-----	-----

Year and month	Index of prices received by farmers (August 1909-July 1914=100)								Ratio of prices received to prices paid
	Grains	Cotton and cotton-seed	Fruits	Truck crops	Meat animals	Dairy products	Chickens and eggs	All groups	
1925.....	157	177	172	153	140	153	163	156	99
1926.....	131	122	138	143	147	152	159	145	94
1927.....	128	123	144	121	140	155	144	139	91
1928.....	130	152	176	159	151	158	153	149	96
1929.....	120	144	141	149	156	157	162	146	95
1930.....	100	102	162	140	133	137	129	126	87
1931.....	63	63	98	117	92	108	100	87	70
1932.....	44	47	82	102	63	83	82	65	61
1933.....	62	64	74	105	60	82	75	70	64
1934.....	93	99	100	103	68	95	89	90	73
1935.....	103	101	91	125	118	108	117	108	86
1936.....	108	100	100	111	121	119	115	114	92
1937.....	126	95	122	123	132	124	111	121	93
1938.....	74	70	73	101	114	109	108	95	78
1939.....	72	73	77	105	110	104	94	93	77
1940.....	85	81	79	114	108	113	96	98	80
1940-June.....	83	81	104	112	102	104	81	95	77
July.....	78	80	89	98	110	105	88	95	78
August.....	76	77	79	107	110	109	90	96	79
September.....	77	76	73	114	114	111	104	97	80
October.....	80	78	79	99	112	116	112	99	81
November.....	83	79	71	98	112	121	120	99	81
December.....	81	79	75	93	111	128	122	101	82
1941-January.....	84	80	78	117	130	121	100	104	85
February.....	81	80	80	156	130	118	90	103	84
March.....	84	82	83	134	129	118	90	103	83
April.....	90	88	89	161	137	121	104	110	89
May.....	93	98	89	146	138	124	107	112	90
June.....	96	107	97	146	144	126	118	118	94

¹ Federal Reserve Board, adjusted for seasonal variation.

² Adjusted for seasonal variation. Revised April 1941.

³ Monthly indexes for months not reported by the Bureau of Labor Statistics are interpolated by use of the National Industrial Conference Board cost-of-living reports.

⁴ Bureau of Labor Statistics index with 1926=100, divided by its 1910-14 average of 68.5.

⁵ These indexes are based on retail prices paid by farmers for commodities used in living and production reported quarterly for March, June, September, and December. The indexes for other months are interpolations between the successive quarterly indexes.

⁶ Index of farm real estate taxes per acre. Base period represents taxes levied in the calendar years 1909-13, payable mostly within the period Aug. 1, 1909-July 31, 1914.

⁷ Preliminary.

NOTE.—The index numbers of industrial production and of industrial workers' income shown above are not comparable in several respects. The base periods are different. The production index includes only mining and manufacturing; the income index also includes transportation. The production index is based on volume only, whereas the income index is affected by wage rates as well as by time worked. There is usually a time lag between changes in volume of production and workers' income, since output can be increased or decreased to some extent without much change in the number of workers.